LOW-JITTER SAW OSCILLATOR (SPSO)

OUTPUT : LV-PECL

For Automotive

EA-2102CB

- Frequency range : 100 MHz
- Operating voltage : 3.3 V
- Output : LV-PECL
- Function : Output enable (OE)
- External dimensions : 5.0 × 3.2 × 1.35 mm
- Applications : Car navigation system, Telematics
- Very low jitter and low phase noise by SAW unit.
- Conforms to AEC-Q200

Pb Free RoHS Compliant

Product Number (please contact us)
Q3861CB00xxxx00

Actual size

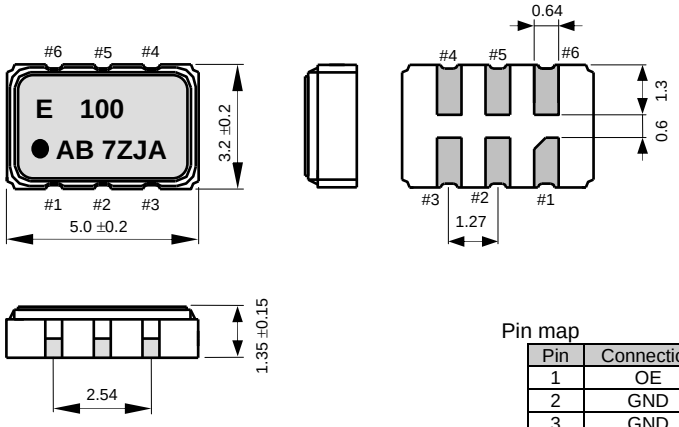
Specifications (characteristics)

Item	Symbol	Specifications	Conditions / Remarks
Output frequency range	f_0	100.0000 MHz	Please contact us about available frequencies.
Supply voltage	Vcc	3.3 V ± 0.3 V	
Storage temperature	T_stg	-40 °C to +100 °C	Storage as single product.
Operating temperature	T_use	-40 °C to +85 °C	
Frequency tolerance *1	f_tol	$\pm 300 \times 10^{-6}$	
Current consumption	Icc	80 mA Max.	OE=Vcc, L_ECL = 50 Ω
Disable current	I_dis	35 mA Max.	OE=GND
Symmetry	SYM	47.5 % to 52.5 %	At outputs crossing point
Output voltage	V_{OH}	2.35 V Typ. Vcc-1.025 V to Vcc-0.88 V	DC characteristics
	V_{OL}	1.60 V Typ. Vcc-1.81 V to Vcc-1.62 V	
Output load condition (ECL)	L_ECL	50 Ω	Terminate to Vcc-2.0 V
Input voltage	V_{IH}	70 % Vcc Min.	OE terminal
	V_{IL}	30 % Vcc Max.	
Rise time / Fall time	t_r / t_f	600 ps Max.	Between 20% and 80% of (V_{OH}-V_{OL})
Start-up time	t_str	10 ms Max.	Time at minimum supply voltage to be 0 s
Jitter *2	t_{DJ}	0.2 ps Typ.	Deterministic Jitter
	t_{RJ}	3 ps Typ.	Random Jitter
	t_{RMS}	3 ps Typ.	σ (RMS of total distribution)
	t_{p-p}	25 ps Typ.	Peak to Peak
	t_{acc}	4 ps Typ.	Accumulated Jitter(σ) n=2 to 50000 cycles
Phase Jitter	t_{PJ}	1 ps Max.	Offset frequency: 12 kHz to 20 MHz

*1 Includes initial frequency tolerance, temperature variation, supply voltage variation, reflow drift, and aging (+25deg.C, 10 years).
*2 Tested using a DTS-2075 Digital timing system made by WAVECREST with jitter analysis software VISI6.

Product Name (Standard form): EA-2102 CB 100.000000MHz
① ② ③
①Model ②Package type ③Frequency

External dimensions (Unit:mm)



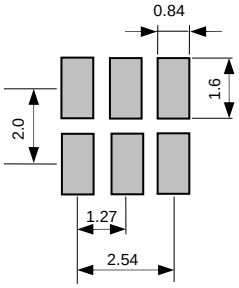
OE pin = HIGH : Specified frequency output.
OE pin = LOW : Output is high impedance

Pin map

Pin	Connection
1	OE
2	GND
3	GND
4	OUT
5	$\overline{OUT}$
6	Vcc

#2 and #3 are connected to the cover

Footprint (Recommended) (Unit:mm)



To maintain stable operation, provide a 0.01uF to 0.1uF by-pass capacitor at a location as near as possible to the power source terminal of the crystal product (between Vcc - GND).

PROMOTION OF ENVIRONMENTAL MANAGEMENT SYSTEM CONFORMING TO INTERNATIONAL STANDARDS

At Seiko Epson, all environmental initiatives operate under the Plan-Do-Check-Action (PDCA) cycle designed to achieve continuous improvements. The environmental management system (EMS) operates under the ISO 14001 environmental management standard.

All of our major manufacturing and non-manufacturing sites, in Japan and overseas, completed the acquisition of ISO 14001 certification.

ISO 14000 is an international standard for environmental management that was established by the International Standards Organization in 1996 against the background of growing concern regarding global warming, destruction of the ozone layer, and global deforestation.

WORKING FOR HIGH QUALITY

In order provide high quality and reliable products and services than meet customer needs,

Seiko Epson made early efforts towards obtaining ISO9000 series certification and has acquired ISO9001 for all business establishments in Japan and abroad. We have also acquired ISO/TS 16949 certification that is requested strongly by major automotive manufacturers as standard.

ISO/TS16949 is the international standard that added the sector-specific supplemental requirements for automotive industry based on ISO9001.

►Explanation of the mark that are using it for the catalog

Pb Free	►Pb free.
RoHS Compliant	►Complies with EU RoHS directive. *About the products without the Pb-free mark. Contains Pb in products exempted by EU RoHS directive. (Contains Pb in sealing glass, high melting temperature type solder or other.)
For Automotive	►Designed for automotive applications such as Car Multimedia, Body Electronics, Remote Keyless Entry etc.
Automotive Safety	►Designed for automotive applications related to driving safety (Engine Control Unit, Air Bag, ESC etc).

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